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# THE PLOTTER

CLACKAMAS COUNTY AREA T/S  
USERS GROUP  
NEWSLETTER

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VOLUME 3, NUMBER 5  
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MAY 1985

EDITED BY: ROD GOVEN  
CHAIRMAN: DICK WAGNER  
V/CHAIR/SEC: VINCE LYON  
TREASURER: ROD GOVEN  
PR OFFICER: BOB EVANS  
LIBRARIAN: LAURA GOVEN

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## MEETING

THE MAY MEETING WILL BE HELD:

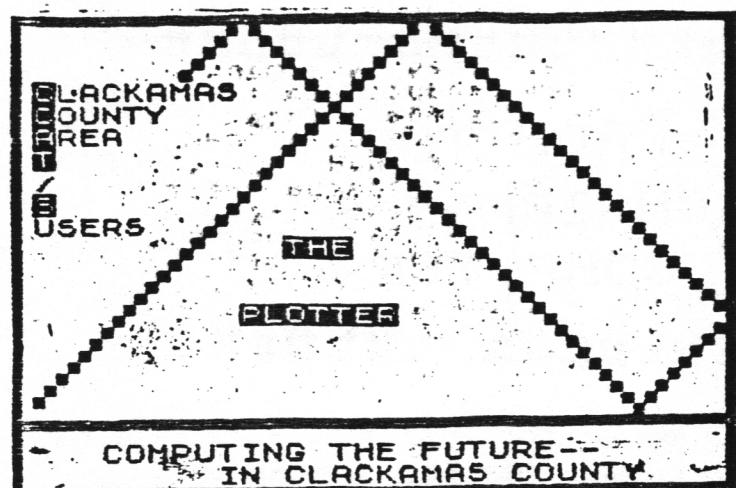
on: THURSDAY, MAY 2, 1985  
at: 7:30 P.M.  
in: COMMUNITY ROOM  
FAR WEST FED S & L  
OREGON CITY SHOPPING CTR

We hope to see all of you there.  
There will be a lot of things to  
see and hear about.

&&&&&&&&&&&&&&

BE SURE TO COME!  
BRING A FRIEND!  
YOU WILL ALWAYS  
PICK UP USEFUL  
INFORMATION!!

BE THERE >>>



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## NEXT MEETING

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AT THE MAY MEETING THERE WILL BE  
SEVERAL THINGS OF INTEREST TO  
ALL WHO ATTEND.

DENNIS JURRIES WILL HAVE HIS XY  
PLOTTER.

ROD GOVEN WILL HAVE THE DUAL  
DRIVE A & J WITH THE NEW PAR-  
ALLEL I/F AND PRINTER. ALSO THE  
GESSO EPROM PROGRAMMER WILL BE  
THERE. IT WILL NOT BE OPERATING  
YET, BUT IT WILL BE OPERATING BY  
THE JUNE MEETING.

DICK WAGNER ALWAYS HAS SOMETHING  
TO SEE, AND THERE MAY BE OTHERS  
THERE AS WELL.

BE THERE!!!!

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-IN THIS ISSUE-

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# FROM THE CHAIRMAN'S COMPUTER--

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DICK WAGNER

The April meeting was the best so far this year. Members who were not able to attend missed a talk by member Dennis Jurries about the manufacture of silicon wafers. As this material is the key to miniturization of computers and the demise of vacuum tubes in the computer industry, we were fortunate to have a first hand discussion of this important material.

New products for our computers are rather mind boggling and now we have CHOICES in many products in place of wondering if there will be any backup for our machines. Every meeting missed may just be the one where something you have been waiting for might be discussed. Moral-try to make every meeting.

As Tom Bent, Editor of Sync-Ware news, so aptly puts it, "When the Speedwagon comes by, jump on. Don't get left in the dust!"

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The EPROM PROGRAMMER was then brought up. Rod Gowen said that GEESO SOFTWARE of California was going to send one to us to see.

There was proposed and passed, a motion that we have no meeting in JULY this year as we did last year.

Our newsletter Editor, Rod Gowen, wants a short vacation from The Plotter, so we will have a combined JUNE-JULY-AUGUST issue this year.

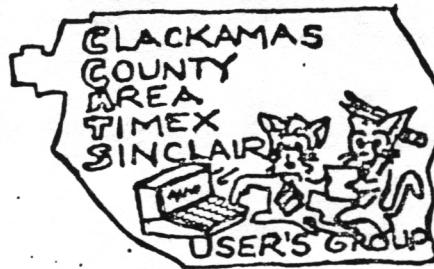
We were also up in the air as to our meeting place in the future, but now it looks as though we have a home at Far West as they are not selling.

The meeting was adjourned at 8:10 P.M. and we had a nice talk from DENNIS JURRIES on the making of silicon wafers.

There was quite a bit of new things to see. The ROTRONICS WAFADRIVE was there, as was the A & J MICRODRIVE.

That's about all the SECRETS for this time, see you next time.

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## INFORMATION!!

Here is a great tip for all TS 2068 owners who are finding that the paint is wearing off the top of the keys on your computer.

Buy a sheet of plastic laminate (like you would put your SS card or a picture in to protect it) from any store for about \$2. Cut pieces to fit the keytops and peel off the backing and stick them on. You'll be many years trying to wear through that!!

Thanks to L. STRANSKY for this tip.

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# SECRETARY'S SECRETS?

## XXXXXX

Our APRIL MEETING was held on April 4th, 1985, at 7:30 P.M. in the Community Room of Far West Federal Savings and Loan, in the Oregon City Shopping Center. We had 24 people attending. Several of them were new to our group. We extend our welcome to them. One was a new member, SID WYNCOOP, welcome to the group SID!!!

After the announcements and the Treasurer's report, we went on to discuss the possibility of a group potluck picnic some Sunday this summer. The idea was tabled for the present.

There was some talk about what new publications we should look into for possible subscriptions. No decision made.

As EDITOR of THE PLOTTER, I take a lot of pride in what I try to do each month for YOU, the members of CCAT/S and readers of this publication. I can only do so much in the time I have to put it together and get it out to you on time. I think that I can safely say that I have one of the best records around for getting this newsletter to you on time and with what usually ends up being a pretty interesting group of articles etc. However, it comes right back to the fact that there are about three or four of us that end up doing all of the work and writing. I was hoping that all of the past editorializing I have done would have done some good, but it hasn't.

At this time I would like to re-print a small piece from the SINCSUS NEWSLETTER, VOL. III, #5.

User groups are, for the most part, run by VOLUNTEERS who depend upon help from ALL the other members, be they novice or expert. Whether it's a "Hello", an article or program or a helping hand with the newsletter (paste-up, mailing, printing, etc etc). INPUT is going to keep YOUR User group going. If you just pay dues, YOU AIN'T A MEMBER!!!! If you don't vote, help in running the group, or share the load in some way, some day there will not be USER GROUPS, BBS's, NEWSLETTERS, SOFTWARE, BUSINESSES, ETC.....

Use the POWER  
within your reach!

## BITS and BYTES

There is so much news out there this month that I hardly know where to begin.

Well, I guess I'll just start anywhere. Most of it is GOOD news anyway.

A & J- has sent out the printer I/F kits for the 2000 drive. They are available at any dealer who sells the drives. I have one and they do work.

This company has announced that they are making a change in the 2000 drive in that it will now be using the same wafer as the 1000 drive. This move is to insure their customers that the supply of wafers will be there as they manufacture the 1000 wafers themselves.

RAMEX- as of this writing, still has not shipped their new disk I/F to one of our members who is impatiently waiting.

AERCO- at our last check, had not shipped any of the disk I/F units for the 060 either.

RESEARCH SERVICE LABS- has a disk I/F available and promises delivery in 4 to 6 weeks of receiving your order. They are building them as you order them. From what we found out by talking to them on the phone, they are very anxious to please. I found the new catalog that they put out to be very clear.

THE SILVER AVENGER- the name given to the Portuguese Timex TC 2068 by the English press, may find its way to our shores if the ENGLISH MICRO CONNECTION and BOB DYL can get it working. This info comes to me from several sources. The unit is said to be similar to our 2068 but has the Spectrum edge board on the rear. This is so it can run Sinclair peripherals.

GES50 PRODUCTS- of California, has sent an EPROM PROGRAMMER to RMG Enterprises on approval and will be at the May meeting. If it is approved, the group will be able to program our own cartridges with up to 16K programs. BOB DRRFELT of GES50 is also working on a manual that will include a complete disassembly of the 2058 and the SPECTRUN, as well as info on how to get more out of your 2058. We will keep you posted on his progress.

(Cont. next page)

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RADIO SHACK- sold out their \$995 X,Y Plotter for an Unbelievable \$195. At least two of our members, DENNIS JURRIES and DICK WAGNER, purchased them to work with. Dennis has his working (see item elsewhere this issue) and will have it at the MAY meeting.

Well, I am going to quit for this time, but I'll be back next time with lots more news (all good, I hope).

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## WAFER TIPS

### PRO/FILE 2068 FOR THE A & J

This month I will explain the four lines that must be altered and show you the actual altered lines before and after to help you make the change-over yourself in order to make PROFILE 2068 run on the A & J MICRO-DRIVE. As I said, there are only four lines to change, two in the LOADER program and two in the Primary program.

You must first start the LOADING process by LOAD "". Then, as soon as you see the screen appear that says the program is LOADING please wait. HIT BREAK and STOP THE TAPE. Press the ENTER key and you will see the LOADER PROGRAM on the screen. It will look like the one below. Study #1 and #2. Change the lines to read exactly like #2. As soon as this is done, put a new FORMATTED WAFER in your drive and SAVE the LOADER PROGRAM by using the direct command: "SAVE "@1,PF"LINE 1. After SAVEing the LOADER, reset the 2068 (turn it off and back on), and rewind the tape and again LOAD the program, this time do not stop it. As soon as the program is LOADED, you will see the prompt asking if you want to LOAD or CREATE a file. At this time, you will press DELETE to get rid of the left quotes and then Press STOP and ENTER. This will STOP the program so that you can make the changes.

After you have made the changes to the lines as shown below, you will SAVE the revised program by using GO TO 8000.

There you have it! A microdrive operating version of PROFILE 2068.

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To SAVE files from the program, just remember to use the micro-drive command (i.e.- "@1,file--" for a name for the file that you wish to SAVE).

IMPORTANT NOTE: IF YOU CAN'T READ ANYTHING WHEN YOU STOP THE PROGRAM OR THE LOADER, IT IS BECAUSE THE PAPER AND THE INK ARE THE SAME COLOR. YOU MUST TYPE IN THE COMMAND: "INK 7" AND PRESS ENTER TWICE. THEN YOU CAN READ THE LISTING.

#### LISTING #1

```
1 BORDER 0
2 PAPER 0
10 CLEAR 63487
30 PRINT AT 5,8; PAPER 1; INK
7; /* PRO/FILE 2068 */;
40 PRINT AT 7,4; INK 7; /* 1984
By THOMAS B. WOODS */; AT 10,11; I
NK 6; "P.O. Box 64"; AT 11,7; INK
6; "Jefferson, NH 03583"; AT 19,7;
PAPER 1; INK 6; FLASH 1; "LOADIN
G"; FLASH 0; INK 6; PAPER 0; "PL
ease wait"; AT 0,0; LOAD "P/f" COD
E 63488,2046
50 LOAD "pro/file"
```

#### LISTING #2

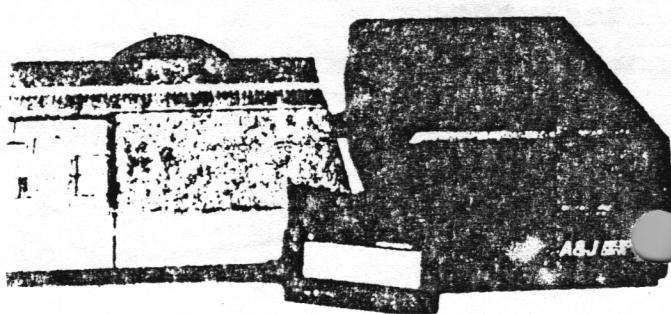
```
1 BORDER 0
2 PAPER 0
10 CLEAR 63487
30 PRINT AT 5,8; PAPER 1; INK
7; /* PRO/FILE 2068 */;
40 PRINT AT 7,4; INK 7; /* 1984
By THOMAS B. WOODS */; AT 10,11; I
NK 6; "P.O. Box 64"; AT 11,7; INK
6; "Jefferson, NH 03583"; AT 19,7;
PAPER 1; INK 6; FLASH 1; "LOADIN
G"; FLASH 0; INK 6; PAPER 0; "PL
ease wait"; AT 0,0; LOAD "@P/f" COD
E 63488,2046
50 LOAD "epro"
```

#### PRIMARY PROGRAM #1

```
8000>SAVE "P/f"CODE 63488,2046
8010 SAVE "Pro/file" LINE 9995
```

#### PRIMARY PROGRAM #2

```
8000>SAVE "@2,P/f"CODE 63488,204
6
8010 SAVE "@3,pro" LINE 9995
```



A&J MODEL 2000

# HARDWARE

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A Long Cable For 2040 Printers  
Dick Wagner

The short cable between interface and printer has been a major complaint with the Timex printer. I decided something had to be done to fit the printer into my limited desk space. Now I have a 3ft. replacement cable to permit better printer placement. I elected to make a cable replacement because it was easier than making an extension cable between computer and interface. The display of this modification at the April User Group meeting drew many questions of how to do it. This article is an explanation of the steps I use.

Essential tools- Philips screw driver, 27-30 watt soldering iron (no soldering gun!), small diameter resin core solder, wire cutter, solder sucker, needle nose pliers, knife, wire insulation stripper. Most of these can be purchased at Radio Shack. Also a heavy dull point needle small vise, and 2, 1/4 x 3/4 bolts and nuts.

Material- 7 wire shielded cable, color coded multi-strand wire. I use cable with this identification- E83208 AUM STYLE 2464. The diameter is important, not over 0.225 inch.

Operation- remove 2 screws in the interface base. Note where the machine screw was removed. Disassemble interface and make a sketch of the 8 holes where the cable is soldered. Orient the sketch by showing the IC. Number the holes and tabulate wire colors. Unsolder the cable. Remove excess solder at each hole with solder sucker and be sure holes are clear and there are no solder bridges between pads. Use the needle to help smooth the solder at hole edges.

Remove the 2 ceramic radio interference tubes from the cable. Do not separate from sponge pad. Measure the length of wires beyond the end of insulation sheath and the length from strain relief bushing to end of sheath. Make a sketch of these dimensions. I use .80 mm to strain relief and 20 mm for wire length.

The printer is next. Remove 4 screws from the base and carefully turn right side up. Separate top from base. Carefully lift strain relief and cable from slot. Lift printer circuit board from base (don't lift by printer mechanism). Bolt the mechanism with 2- 1/4x3/4 bolts and nuts at opposite corners. Don't be fooled by the mechanism not appearing to be loose; they will separate before you finish and could cause damage.

Unsolder the wires and clean off excess solder at each hole. Be sure holes are clear. Try a needle at each hole, from the solder side. Twisting the needle may help to clear rough edges.

Make a sketch of the row with 9 holes where cable is located, plus the ground wire hole. Orient your sketch and number the holes. Make a table of numbers and corresponding wire colors.

Make a sketch of cable relief location and length of wires. I use 48 mm for wire length and strain relief is at the end of insulating sheath.

To remove strain reliefs do this carefully- Use needle nose pliers to compress sides of sleeve at various locations. The slotted thin end should slide on the sheath when pushed. Next work the solid end by pushing each way with pliers, using the groove and end. If necessary slide the needle point between the sheath and strain relief. Using great care because the groove has thin walls. Force the strain relief off with plier tips in the groove.

Cut cable to length. You will loose about 5 inches for cable inside equipment. I use 36 to 40 inches of cable. Carefully make cuts around the sheath to expose wire at required dimensions. Do this lightly as the shield is foil with a 7-wire conductor. Bend the cable each time to expose the shield if the cut is deep enough. The sheath will slide off. Trim shield away, being carefull of the conductor.

Remove about 1/8 inch of insulation from each wire, don't nick any wires as they can break. Smooth each end so wires are in place and nice and tight. Put a touch of solder on each, only enough to hold wires together. Too much will make wires too big to go in circuit board holes. Do the same with the ground wire.

Now compare the cable wire colors with the original charts. If they are not the same note the color substitutions. The cable I used has white in place of yellow.

Now install strain reliefs. Note the groove has a flat. This will go toward the case half without a cut-out. The interface end has the flat down while the printer end has the flat up. It isn't mandatory but the cable lays better this way. Moisten the sheath and carefully force the strain reliefs into position according to your sketches.

(cont. next page)

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Solder cable wires in correct holes, being very sure none of the little wires spread out and don't go in the holes. They can short adjacent pads. Check with a magnifying glass if any look questionable. Don't forget to install the 8 ceramic sleeves on the cable that fits the interface before soldering.

To assemble the printer, remove the 4 bolts and place the circuit board on the base, fitting the 4 plastic supports properly with the rubber bushings. Press cable and strain relief in the cable slot, place cover over the base, turn over and install 4 screws. Start screws with fingers and then screw driver.

To assemble interface, be sure the 8 ceramic sleeves drop in the slot along with the cable and strain relief. Place bottom cover over the parts, being sure the circuit board and grounding spring is properly located. Install machine screw in the end that holds the spring, and the coarse thread screw in the opposite corner.

Now test for proper operation.

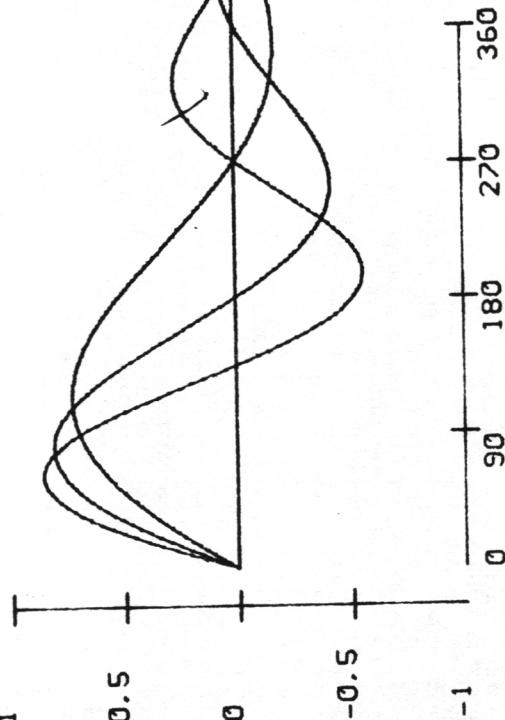
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## FLASH!

Here we have a sample program and the results as printed and plotted(?) on DENNIS JURRIES' RADIO SHACK PLOTTER.

Thanks Dennis!!!

```
10 REM Sample Program (Sine Curve Plot)
20 LPRINT "I1500,1000"
30 LET dr=ATN (1)/45: LET d=0
40 FOR n=1 TO 2 STEP .5
50 LET r=300
60 FOR i=0 TO 360 STEP 2
70 LET x=i*3: LET y=INT (r*SIN (I*n*dr))
80 LPRINT "D";x;",";y
90 LET r=r-2: NEXT i: NEXT n
100 LET d$="0": LET x=0
110 LPRINT "M0,-300"
120 FOR i=1 TO 5
130 LPRINT "M";x;",";-350"
140 LPRINT "P";d$
150 LET d=d+90: LET d$=STR$ d: LET x=i*180-50: NEXT i
160 LPRINT "M-50,-300": LPRINT "X0,150,4"
170 FOR i=300 TO -300 STEP -150
180 READ d: LPRINT "M-200,";i
190 LPRINT "P";d: NEXT i
192 LPRINT "M0,-300": LPRINT "X1,180,4"
195 STOP
200 DATA 1,.5,0,-.5,-1
```



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## LIBRARY NOTES

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You may not be aware of it but we have at YOUR disposal and for YOUR use a very large LIBRARY. I know that a lot of you do use it but more of you do not.

We have, this time, at least 18 different NEWSLETTERS arriving each month. As EDITOR of The Plotter, I do my best to glean the best of the current news from each of these, but there are only so many hours in the day and so many days in the month and I do not get more than 2/3s of them scanned each month. We do try to enter the high-lights of each issue into the INDEX that we now have on tape as they come in, thus keeping a somewhat current list of what is in the LIBRARY. If any of you have PRO/FILE 2068 and would like a copy of the INDEX, just call 655-7484 to see about getting your copy.

We also have a lot of magazines and books available to be checked out.

We're also hoping to see our tape LIBRARY grow in the 2068 section. We have some programs on tape, but we would like to see more.

IT'S YOUR LIBRARY-- USE IT!!!!

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## AN INVERSE PROBLEM- SOLVED!

A SOLUTION TO A 2068 PROBLEM  
by DICK WAGNER

While COPYING a program, I somehow developed an INVERSE VIDEO condition well into the program. It showed up as inverted after ENTERING each time. Efforts to clean up the program seemed futile.

The problem was solved by DELETING the last good line and all larger numbered lines. The program was then SAVED, the computer was cleared with a NEW and the program was reLOADED. The computer was thus cleared of the lockup, and the program SAVED except for the one good line DELETED.

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## MACHINE CODE SPECIAL INTEREST GROUP

by Dennis Jerris

For quite sometime many of us have talked about starting a machine code special interest group. Well this is the time. Starting this upcomming meeting after the regular meeting at about 9:00 PM we will meet and discuss machine code. Anyone can sit in and listen but only those who meet the following conditions will be allowed to join any discussion.

1. Must have a MC assembler.
2. Must have a MC disassembler.
3. Must know how to count and convert Hex to Binary to Decimal.
4. Must have a general knowledge of opcodes and understanding of same.

The first program we will try writing will be one to color in regular shaped objects. The logic of the writing of such a program may go the following way

\* The display file starts at address 15384 and ends at 22527. This is for 24 lines with 32 (8) bit blocks per line. The attributes file starts at address 22528 and ends at 23295. This is for 24 lines with the last 8\*32 bytes handling the last 2 lines. A good start is to search the screen until a location byte is other than 0 in the display file. Decode that byte and change it until everything from that bit on in the byte is a filled solid. Look at the next byte, if it is zero then change it to 255, and so forth until the next nonzero byte is found. Decode this second nonzero byte so that everything to the right of the bit is filled in. Continue on to the next line and so on. You will have to set up a counter so that you do not go past the display file area. You may also have to change the attributes to change the color. Next draw a circle and check out your program.

We will discuss this program approach in the next meeting and then work on the program until the following meeting at which time we will each turn in a copy of the listing of our program opcodes.

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TS 1000/2068 HIGH QUALITY WIRE-  
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